

ABSTRACT OF THE DISCLOSURE

[78] Systems and methods are disclosed for detecting temporary high level impairments, such as noise or interference, for example, in a communications channel, and subsequently, mitigating the deleterious effects of the dynamic impairments. In one embodiment, the method not only performs dynamic characterization of channel fidelity against impairments, but also uses this dynamic characterization of the channel fidelity to adapt the receiver processing and to affect an improvement in the performance of the receiver. For example, in this embodiment, the method increases the accuracy of the estimation of the transmitted information, or similarly, increases the probability of making the correct estimates of the transmitted information, even in the presence of temporary severe levels of impairment. The channel fidelity history may also be stored and catalogued for use in, for example, future optimization of the transmit waveform.